Trinity Consultants

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VIA E-MAIL

August 13, 2008

Ms. Julie Jordan Metts
Supervisor, Air Quality
Santee Cooper
One Riverwood Drive
Moncks Corner, SC 29461

RE: Background Information on ECO Control Technology

Dear Ms. Metts:
You have requested that we supply you with background information regarding why Eelectro-Catalytic Oxidation (ECO) is discussed as an "instead of" technology rather than an "add on" technology in Santee Cooper's 112(g) Application. We provide the following in response.

This letter first provides a summary of the ECO technology for mercury control and planned or current installations, and then uses that data to answer your question.

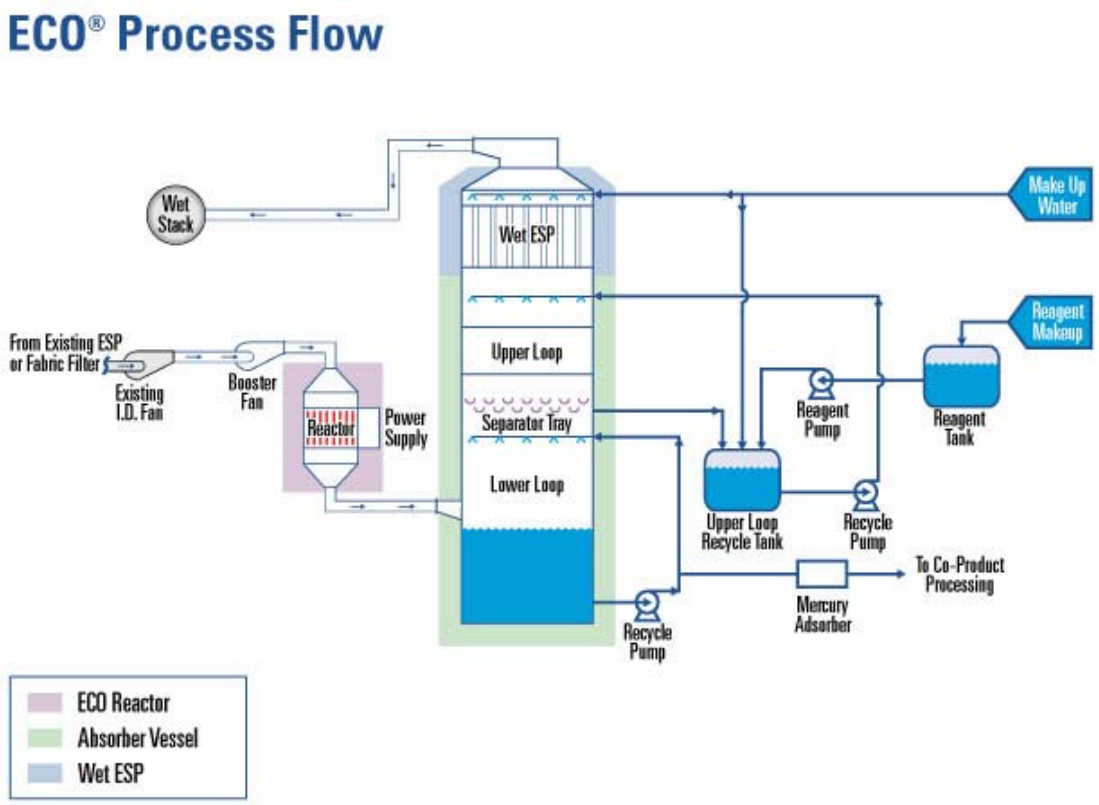
POWERSPAN ECO

Powerspan has marketed the ECO process since approximately 2000. There are actually two variants of the ECO process available, though both are often simply referred to as ECO. Powerspan differentiates the two as ECO (original and full process) and ECO-SO_2 (subset of full process).

In the submitted 112g permit application, no differentiation was made between ECO and ECO-SO_2, as the distinction of which was used where was unclear at the time.

Figure 1 shows a schematic of the ECO process as provided by Powerspan.

FIGURE 1. POWERSPAN ECO PROCESS.



The ECO process consists of three key elements.

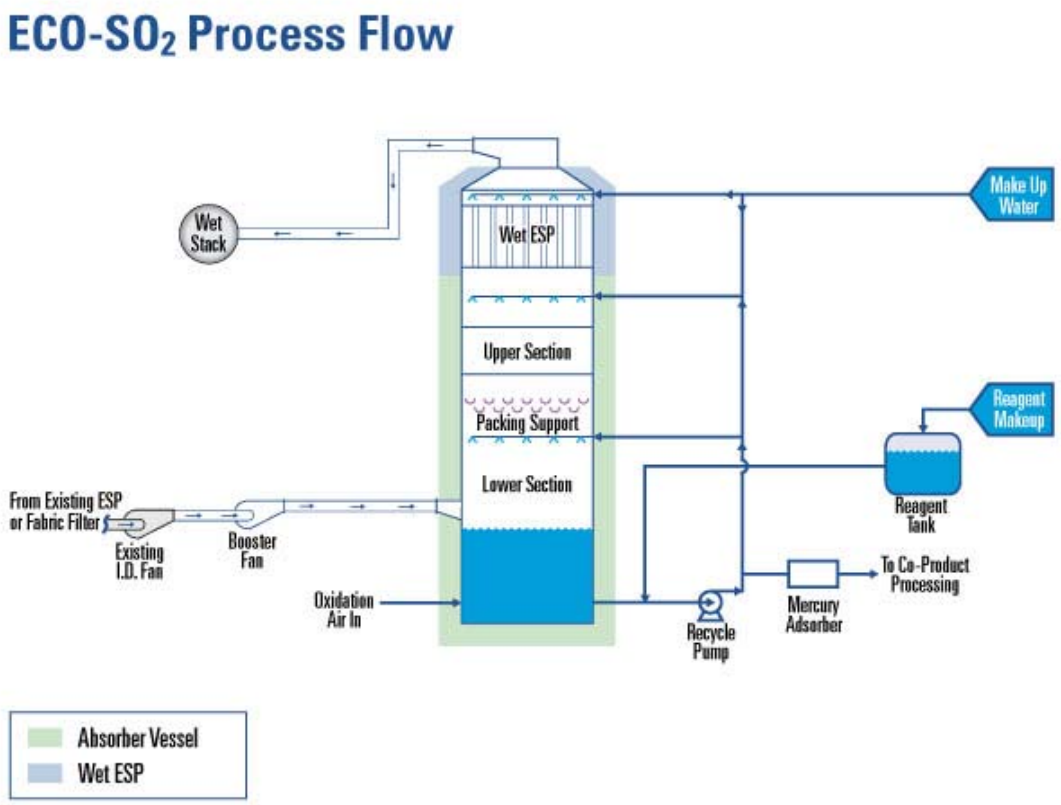
1. Reactor
    a. Oxidizes NO to NO_2 or HNO_3
    b. Oxidizes some SO_2 to SO_3 and H_2SO_4
    c. Oxidizes elemental mercury to divalent mercury
2. Scrubber – uses ammonia to remove SO_2, NO_2, and divalent mercury
3. Wet ESP – removes acid gases – HNO_3, SO_3, H_2SO_4

To date, the full ECO process has been installed on a commercial scale only once, on a 50 MW slipstream at FirstEnergy's R.E. Burger Plant in Shadyside, Ohio. Based on a 180 day performance test in 2005, the ECO processed achieved an 85% removal efficiency for mercury.

POWERSPAN ECO-SO_2

Powerspan also markets a version of ECO that excludes the ECO Reactor but includes the ammonia scrubber and the wet ESP. This reduced version is called ECO-SO_2. A schematic of ECO-SO_2 from Powerspan is provided as Figure 2. The absence of the ECO Reactor is evident.

FIGURE 2. POWERSPAN ECO-SO_2 PROCESS.



Two projects using ECO-SO_2 are planned. In each case, SCR is first used for control of NO_X, and then the ECO-SO_2 process removes SO_2 and divalent mercury.

- ▲ AMP Ohio
- ▲ Units 4 and 5 at FirstEnergy R. E. Burger Plant

Powerspan marketing documents represent that the AMP Ohio project has committed to use ECO-SO_2, although the recently issued PSD permit for the facility allows for the usage of either an ammonia-based scrubber (ECO-SO_2) or a calcium-based scrubber (standard wet flue gas desulfurization). Trinity reviewed the permit application, statement of basis, response to comments and final permit for the AMP Ohio project, and no details of the ECO-SO_2 system are provided other than an ammonia scrubber may be used.

POTENTIAL USAGE AS AN ADD-ON TECHNOLOGY

To date, the only installations of ECO or ECO-SO_2 technology have been as an "instead of" application. The ECO system replaces SCR and the SO_2 scrubber, while the ECO-SO_2 technology solely replaces the SO_2 scrubber. The lack of commercial consideration of ECO or

ECO-SO_2 as an add-on technology suggests that the technology is only suitable as an "instead of" technology.

Since Trinity was unable to locate any literature addressing the feasibility of ECO or ECO-SO_2 as an add-on technology, we contacted Ms. Stephanie Procopis of Powerspan directly to inquire about the possibility of using the technology as an add-on to increase removal of mercury.[1] According to Ms. Procopis, the primary market for and benefit of their technology is SO_2 removal, and the addition of the ECO Reactor for NO_X control can be useful if there is no SCR system. Ms. Procopis' statement is supported by the commercial projects that are using their technology, with both being the ECO-SO_2 version. Further, Ms. Procopis stated the mercury removal is only a co-benefit of their process, and that installation of their technology is not appropriate as an add-on technology for mercury control.

As the Director of Marketing for the equipment vendor, Ms. Procopis would be expected to have the most favorable viewpoint regarding potential applications of their technology. Thus, her opinion that their technology is not appropriate as an add-on control should be given significant deference.

In summary, there is no indication that ECO (or ECO-SO_2) can be appropriately considered as an "add on" technology, but instead should be considered only as an "instead of" technology.

If you have any additional questions, please feel free to contact me at 404-256-1919.

TRINITY CONSULTANTS

J. Russell Bailey III
Principal Consultant

cc: Mr. Kevin Clark, Santee Cooper (Moncks Corner, SC)

[1] Phone conversation between Mr. Russell Bailey (Trinity) and Ms. Stephanie Procopis (Director of Marketing, Powerspan), August 8, 2008.